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ABSTRACT

This study examined effects of interpersonal and intrapersonal cognitive conflict tasks on 54 fifth and 18 seventh grade children's sociomoral rule awareness. Preconventional stage children 9 years of age were paired in same-sex dyads with 9- and 11-year-old children intermediate between preconventional and conventional stage reasoning. Six legal contravention vignettes were given to all subjects in individual interviews as a pretest. For each vignette, six questions were asked: four were designed to tap children's levels of legalistic awareness on Piagetian moral judgment dimensions and two tested supplementary dimensions of social rule perception. Subjects then played a board game that reintroduced the pretest items. In the interpersonal conflict condition, questions were asked of players that encouraged conflict, discussion, and agreement. In the intrapersonal condition, conventional statements were presented to individual players that conflicted with their earlier preconventional judgments; subjects were asked to accept or reject the conflicting statement and explain their decision. Immediate and delayed posttest interviews introducing novel test items were administered to assess stage advancement. The pattern of change from pre- to posttests supports Piaget's view of cognitive conflict. Intrapersonal conflict subjects advanced more than control subjects, indicating that the social coordination of perspectives is not a prerequisite for advancement. Children can advance by means of an internal perception of conflict and a subsequent restructuring of their knowledge. (RH)

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The Development of Children's Social Rule Awareness Through Cognitive Conflict and Social Interaction

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SUMMARY

This study examined the effects of interpersonal and intrapersonal cognitive conflict tasks on children's sociomoral rule awareness. Nine-year-old preconventional stage children were paired with nine and eleven-year-old children intermediate between preconventional and conventional stage reasoning in same-sex dyads for conflict on legal contravention items. An experimental board game was used for all dyadic interactions. The four investigative phases included a pretest interview, dyadic interaction, one immediate and one delayed posttest interview. The result indicated no overall superiority of interpersonal conflict over intrapersonal conflict as a stimulus to development. Lower and higher level subjects in both conflict conditions advanced over both posttests compared to a control group. Elements of subjects' discourse during conflict were correlated with posttest advancement. Marked differences emerged between lows and intermediates for interpersonal conflict consonant with the cognitive-developmental view that social interaction and cognitive stages are interdependent. A complementary pattern of positive correlations emerged between discourse and intrapersonal conflict subjects' advancement. The findings were discussed in terms of their concordance with Piaget's cognitive-developmental approach and their dissimilarity to effects suggested by theories of imitation and compliance.

The concept of cognitive conflict (Piaget, 1977) is central to the Genevan school's account of development. Conflict is the internal experience of a cognitive gap or disturbance in one's system of knowledge. A compensatory response to the disturbance can result in re-equilibrium and advancement. However, its heuristic value does not extend to explaining the impetus to development. Indeed, several social and innate contributory factors can be postulated. Specifically, Piaget (1932) acknowledged that peer interaction might, as a source of decentering, transform and develop thought but did not accord it more causal status than other factors. This position has attracted critical attention within the last decade. Two present lines of research may be distinguished, both of which accentuate the importance of social interaction yet differ in their support of Piaget's view regarding cognitive conflict.

The first is the 'socioconstructivist' account of development presented by Doise and his colleagues (e.g. Doise et al., 1975; Doise, 1978; Mugny & Doise, 1978; Perret-Clermont, 1980). Doise has argued that social interaction stimulates cognitive development by permitting group co-ordinations to facilitate intrapersonal co-ordinations. According to this account, each group member restructures his/her cognitive

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performance to co-ordinate it with the performances of others. This restructuring event may in turn allow each participant to adopt a more advanced and consistent approach. While the Piagetian view on conflict is largely accepted, the principal mechanism of development is held to be interpersonal conflict, i.e. a dynamic, social opposition between the opinions or levels of reasoning of two or more individuals. Doise maintains that interpersonal conflict between peers of equal advancement can produce further progess as can a child's experience of another's less or more advanced approach (see Doise & Mackie, 1981, for a review) and he stresses, against Piaget, the superiority of interpersonal conflict to other conflict enhancing situations (Doise & Mugny, 1979). Secondly, Russell (1981a, 1981b, 1982) presents a contrasting line of research supporting the notion that social interaction may lead to improved performance only insofar as it presents occasions for imitation of more advanced subjects by their less advanced partners. Thus, Russell denies that conflict is important.

Yet on both counts there is pro-Piagetian evidence. First, in an attempt to replicate Doise & Mugny's (1979) findings, Emler & Valiant (1982) compared the effects of two conflict situations - interpersonal and intrapersonal - on children's performance on spatial representation tasks. In the latter condition, conflict arose from an internal, as opposed to a social, awareness of contradiction. Their research led them to conclude that while cognitive conflict leads to significantly more development than an individual practise condition, conflict does not need to be present socially since both inter- and intrapersonal modes led to

almost equal progress.

Secondly, the imitation hypothesis does not account for the socioconstructivists' claim that progress results from conflict situations in which no participant offers either a correct or a more advanced judgment (Perret-Clermont, 1980; Doise & Mackie, 1981). In addition, it appears less likely in the face of studies focussing on the kinds of interaction which expedite development. Berkowitz & Gibbs (1983) and Damon & Killen (1982) report long-term advancement in young adults' and children's moral orientation, respectively, as a result of social interaction. Both studies stress a transactive and transforming quality - as opposed to a representational, imitative quality - in the debates of subjects who advanced subsequently. The distinction is really one between the 'extended' and 'minimal' forms of utterance (Howe, 1981): between the transformation of earlier discourse by presenting new information and the simple, direct re-presentation of earlier discourse. Even so, the verbal correlates of progress differed between the studies. While Berkowitz & Gibbs support Doise in their emphasizing of extended, conflictual discourse, Damon & Killen focus on an extended, co-operative form of discourse.

The aims of the present study were: to investigate the above issues further, to extend discourse analysis to the intrapersonal conflict condition, and following Emler's (1983) commentary, to apply the interpersonal conflict model of Doise to a moral domain of knowledge: legal rule perception. Conflict effects were studied in relation to a legal-moral transition

derived from the structural-developmental theories of Kohlberg (1976, 1981; Tapp & Kohlberg, 1977) and Piaget (1932): from preconventional reasoning or the 'morality of constraint' to conventional reasoning or the 'morality of co-operation'. It was expected, in line with Piaget, that inter- and intrapersonal conflict situations would stimulate advancement in comparison to a no-conflict control. It was also expected, after Doise, that advances would occur in both lower and higher level children and that social interaction would augment the conflict effect.

METHOD

Subjects

The initial pretest interview sample consisted of 107 subjects: 71 fifth year subjects (31 males, 40 females) with a mean age of 9.38 years (SD=0.31) and 36 seventh year subjects (16 males, 20 females) with a mean age of 11.57 years (SD=0.25). They were selected randomly from classes in three primary schools located in a predominanty upper-working class to middle class area. Seventy-two subjects (36 males, 36 females), comprizing of 54 fifth year (mean age, 9.40yr; SD=0.31) and 18 seventh year subjects (mean age 11.53yr; SD=0.22), were selected from this pretest pool and participated in all experimental phases.

Procedure

Pretests Six legal contravention vignettes were given to all subjects in individual interviews. These included a range of ethical basis, determined by independent adult raters' judgments in a pilot study. A set of six unvarying questions was used for

each vignette. Four were designed to tap children's levels of legalistic awareness on Piagetian moral judgment dimensions, e.g. moral absolutism, while two tested supplementary dimensions of social rule perception, e.g. perception of rules' importance. The story and question formats proceeded from Piaget's clinical approach and its application by Turiel (1974, 1978) to social-cognitive testing (details of vignettes and questions are obtainable from the authors). Subjects' responses were tape-recorded and scored on a checklist during the interviews. A conventional reasoning composite score out of 24 (4 dimensions x 6 transgression scenarios) was derived. A child scoring 0-8 was labelled 'preconventional', one scoring 9-16 was labelled 'intermediate' and one scoring 17 or more was labelled 'conventional'. On this basis, 72 intervention subjects were selected from the pretest sample.

Experimental group conditions Same sex preconventional and intermediate subjects were paired and assigned to conditions. Preconventional nine-year-olds were placed with intermediate nine- or eleven-year-olds so that six nine-year-old and six nine- and eleven-year-old dyads occupied each condition. Social interaction and conflict occurred via a board game entitled 'Conviction'. As players moved, they landed on squares which required picking and reading aloud story cards. These briefly outlined the pretest items. Questions were then re-introduced, their treatment being dependent on the condition. Only minimal experimenter intervention was required.

1) Interpersonal conflict Selected dyads included subjects whose responses disagreed considerably. Conflict was encouraged by providing questions which had elicited these pretest conflicting responses. Dyad members were asked to discuss an issue and agree before moving on. There was no time limit for interaction since this would have affected the discussion's spontaneity. Also, to guard against the possibility that discussion outcome was due to a difference in partners' social dominance, control issues of the type used by Miller & Brownwell (1975) were included.

2) Intrapersonal conflict Subjects in this condition were presented with conventional statements conflicting with their earlier preconventional judgments but did not discuss them with their partners. They were asked to accept or reject the conflicting response and explain their decision.

3) Control sessions There were no conflicting items in these interventions. Instead the subjects answered several questions in the pretest manner for any stories they read.

Posttests All 72 subjects were re-tested on pretest material on the same day as participating in the games. A second posttest interview was conducted several weeks later, being designed to detect any lasting effect. Novel items replaced three vignettes in view of Kuhn's (1974) argument that an effect generalizing to non-intervention material may indicate advancement.

Reliabilities Reliability data was obtained for the moral judgment dimensions from a random selection of six recorded

pretest interviews. Raters coded statements as preconventional, conventional or unclassifiable. The estimate of reliability chosen for computing agreement was the kappa coefficient k (Fleiss, 1973); reliability kappa coefficients ranged from .73 to 1.00.

Discourse-categories Similar categories were applied to both conflict conditions to establish which were associated with change. Reliabilities were estimated by two coders and obtained from three interpersonal and three intrapersonal conflict dialogues, selected for their extensive range of speech acts. Across categories, k agreement for a total of 166 scored interpersonal conflict acts was .67; for 78 intrapersonal conflict acts, k agreement was .81. Two distinctions divided the categories for both modes of conflict. A child's utterance was scored as accepting or rejecting a prior utterance, and defined as minimal or extended. A third distinction related to interpersonal conflict. A child's utterance was classed as referring either to a personal earlier statement or to a partner's statement.

RESULTS

Interview data

Table 1 presents means for pre- to posttest change for each initial level of subject and condition. Two sociomoral change scores were determined for subjects. These reflected the difference in conventional reasoning frequencies between the

pretest and the two posttests. A 2x3x2 (initial sociomoral level x condition x pre- to posttest change) analysis of variance was computed, with repeated measures on the last factor, on subjects' change scores. There was a significant main effect for initial level, $F=15.42$, d.f.=1,66, $p<0.001$, indicating superior progress by preconventional children over intermediates. There was also a significant main effect for condition, $F=9.46$, d.f.=2,66, $p<0.001$, but not for pre- to posttest change, $F=0.18$, d.f.=1,66. The nonsignificant result reveals a lasting posttest attainment above the pretest level. None of the interactions reached significance. Duncan's multiple-range tests (Bruning & Kintz, 1968) were used as follow-up analyses on the condition effect. The change scores of subjects in both conflict conditions were significantly more positive than those of subjects in the control condition (<0.01). No significant difference was found between conflict conditions.

[Insert Table 1 about here]

Two additional sets of 2x3 (pairing x condition) analyses of variance were conducted to determine the effects of pairing same-age and different-age subjects. An analysis of variance was employed for each pre- to posttest change. For preconventional subjects, the pairing effect was nonsignificant for pre- to immediate and pre- to delayed posttest change ($F=0.00$,d.f.=1,30; $F=0.43$,d.f.=1,30, respectively) indicating that the age of a nine-year-old's partner was not a factor contributing markedly to improvement. Again the condition effect reached significance for pre- to immediate and pre- to delayed posttest change ($F=10.75$, d.f.=2,30, $p<0.001$; $F=4.46$,d.f.=2,30, $p<0.05$; respectively).

However, in the case of the first posttest, the significance of the effect was due partly to interpersonal conflict subjects advancing more in the short term than their intrapersonal conflict peers (Duncan's test : <0.05). The pairing x condition interactions failed to reach significance. The only significant age-dependent result regarding intermediate subjects' score changes lay in the pairing x condition interaction for pre- to immediate posttest change, $F=3.60, d.f.=2,30, p<0.05$, indicating that eleven-year-old intermediates advanced more in the short term than nine-year-olds of the same level after interpersonal conflict but not after intrapersonal conflict or a control game.

Interactive analysis

Preconventional and intermediate subjects were split in a 2x2 chi-square analysis according to whether they won or drew/lost the argument in the majority of trials during interpersonal conflict. For experimental items, two lower stage children tended to have their opinions upheld as opposed to ten who drew or lost. This situation was reversed for higher stage children. The analysis revealed that higher level subjects won in a significantly greater number of cases, $X=10.66, p<0.005$. This did not occur for control items. Results were identical for lower and higher level subjects with five overall winners and seven children drawing or losing, $X=0.83$.

The ways in which lower and higher level subjects reasoned during the conflict games were approached through a discourse analysis. The influence of discourse on positive change was

investigated by correlating the frequency of categories' occurrence during a game with subjects' change scores. Proportional frequencies were used after Damon & Killen (1982) since the length of interactions varied considerably between pairs. Table 2 presents Pearson correlation coefficients obtained for each interpersonal conflict category and combinations of categories where the relative proportions were summed. Furthermore, an utterance performed by a child could also be coded as one which his/her partner attended to. This treatment of discourse allowed us to infer when it was a child's own statements, the statements of his/her game partner or the statements of both which prompted change. Table 2 presents this additional information.

[Insert Table 2 about here]

While opinion conflict generated a reappraisal in preconventional subjects, extended interpersonal discourse tended not to be positively associated with this group's advances. The case of higher level children was somewhat different. It should be emphasized that performed discourse including extended modes of speech correlated highly with their posttest progress. Advances by intrapersonal conflict subjects (Table 3) were also linked positively with extended discourse. Correlations were two-tailed because in this instance we were not investigating a tentative set of hypotheses. In both tables, many correlations failed to reach significance due to the small sample size, and no more than a chance percentage of correlations were significant. Despite this, many near-significant results are apparent and contribute to a consistent, overall pattern.

[Insert Table 3 about here]

DISCUSSION

The pattern of change supports Piaget's view of cognitive conflict. Intrapersonal conflict subjects advanced more than control subjects indicating that the social co-ordination of perspectives is not a prerequisite for advancement. Children can advance by means of an internal perception of conflict and a subsequent restructuring of their knowledge. Our results are less supportive of Doise and his colleagues. Progress proceeded from conflict with a lower level response as well as with a more advanced response consonant with their claim that subjects can profit from an encounter purely with an opposing perspective. At the same time though, the picture seems similar to that put forward by Emler & Valiant (1982). In our study and theirs, interpersonal conflict did not lead to greater advancement compared to intrapersonal conflict overall. Neither was Doise & Mugny's (1979) finding that intrapersonal conflict subjects tended not to advance substantiated by us. And, although lower level subjects advanced more after inter- rather than intrapersonal conflict, the effect was a transitory one.

Subjects' progress is one indicator of cognitive restructuring. Lower level subjects' responses became more mature while higher level subjects consolidated their more advanced orientation. The transition was not an abrupt one and concurs with a consensus of opinion between cognitive developmentalists (see Turiel, 1983) that change is a gradual

process in accordance with Piagetian equilibration theory. Moreover, the duration and generalization of advancement to non-intervention items provide two further indicators. Together they suggest that advancement was due to structural development as opposed to imitation (Russell). The intervention analysis results consolidate this. The control task revealed that while intermediate subjects won more discussions than lows, this was so only for legal items. Advancement did not occur because higher level subjects were socially dominant. Rather, the recognition by lows that higher level reasoning was such is suggested. Again, extended modes of discourse correlated highly with change for intrapersonal conflict subjects and intermediate interpersonal conflict subjects. A compliance account cannot explain easily the multitude of novel explanations and arguments created by children to justify their responses. More probably, this indicates cognitive restructuring and a preliminary step towards assimilating other viewpoints (Perret-Clermont, 1980). Finally, pairing nine-year-olds with nine- and eleven-year-olds did not affect change. Thus a relational regulation prompted by age, i.e. younger children perceiving older children as more knowledgeable, is not an issue.

Contrasting modes of discourse correlated positively with interpersonal conflict lower and higher level subjects' advancement. Only the progress made by intermediates was related positively to an extended, transforming discourse which they themselves brought into play. A further distinction is that intermediates' progress was correlated highly with performing and attending to rejecting types of discourse while preconventional

subjects' progress was not. This concurs with Piaget's (1950) contention that social interaction and individual cognitive structure are mutually dependent. The type of interaction a child engages in depends upon his/her level of development: the more complex his/her cognitive schemes the greater the child's potential to co-ordinate them socially. And, the type of interaction will exert its influence just as much on the child's mental structure. So regarding our lower level subjects, while the presence of an interactive other and an interpersonal conflict of opinion clarifies the point of conflict, it produces only internal co-ordination and restructuring. That is not to say that lower level subjects cannot argue. Rather, because internal structure has still to achieve an essential equilibration, lows are limited in such a way that social argument (i.e. social co-ordination of perspectives) cannot promote internal co-ordinations. For higher level subjects though, whose advances correlated with extended, rejecting types of discourse, a more sophisticated type of social interaction was required to facilitate internal restructuring and further advancement. For them, interpersonal conflict may not be a more potent impetus to development than intrapersonal conflict unless it contains more ongoing, overt disagreement. Five of our twelve dialogues included no extended rejections by one child of the other's ideas and a further two contained surprizingly little. The difficulty of inducing overt disagreement between children has been expressed by several researchers (e.g. Emler & Valiant, 1982; Mugny et al, 1984) and requires careful consideration. Yet

if we are correct in stressing the importance of conflictual, dynamic interaction, Doise & Mackie (1981) may be mistaken in asserting that social interaction becomes less effective in stimulating development after the onset of a notion. It is quite likely that interpersonal conflict is a key impetus to consolidating an orientation - if its dynamic potential is encouraged.

Our interactive data is consistent to some extent with Berkowitz & Gibbs (1983; see also Berkowitz et al., 1980) who report that dyads using conflictual extentions advanced more than those failing to use them but we suggest that this was an effect produced by their employment of intermediate and conventional reasoning subjects. We concur also with Damon & Killen (1982) in so far as our lower level subjects did not advance through open, interactive conflict. We disagree though regarding what these subjects did do. Damon & Killen report the positive effect of an interactive accepting and transforming of others' notions for their five- to nine-year-olds. In our older sample, however, lows' advancement does not correlate with their own use of such discourse or with the reception or performance of our interactive aggregate agreement category. Also Damon & Killen admit that their results for higher level subjects were equivocal. This contrasts with our more positive findings concerning conflict and extention. However, we did find a consistent tendency in intra-personal conflict subjects to advance after producing extended agreements with conflicting responses. In any event, differences in findings may relate to the nature of the particular moral domains investigated, the relative ages of subjects and the

different procedures adopted.

In conclusion, social interaction may be shown to be important throughout development if more advanced forms of social exchange and conflict are intensified. A future investigation should promote interpersonal conflict between same-level subjects. It is expected that two intermediate level subjects would generate a more intense mode of conflict. In addition, such a study would test Doise's claim that equally advanced subjects can benefit from conflict provided their centrations are opposed, and extend this proposition to a social-cognitive domain. This should lead to greater understanding of the interdependency which both Doise and Piaget speak of between social relations and equilibration.

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TABLE 1: Mean sociomoral change scores for preconventional and intermediate children over two posttests for different conditions.

	Initial Sociomoral level							
	Preconventional				Intermediate			
	P - IP		P - DP		P - IP		P - DP	
Conditions	X	SD	X	SD	X	SD	X	SD
Interpersonal conflict	6.08	3.73	4.58	4.08	0.67	3.75	0.83	2.76
Intrapersonal conflict	2.67	2.84	3.33	2.90	1.67	3.23	1.08	3.06
No conflict control	0.17	2.25	0.67	2.23	-0.83	2.62	-0.92	2.27

note : P - IP = pretest to immediate post-test

P - DP = pretest to delayed post-test

n = 12 in all groups

negative means denote mean regressive change.

TABLE 2: Correlations between speech acts attended to and performed in interpersonal conflict and children's change scores over two posttests.

Category	Initial Sociomoral Level: Preconventional P - IP	Preconventional P - DP	Intermediate P - IP	Intermediate P- DP
A attended				
1 minimal agreement)	+.45	+.56*	-.06	-.66**
2 extended agreement)with	+.20	+.12	-.14	-.32
3 minimal disagreement)self	-.02	-.34	-.48	+.29
4 extended disagreement)	+.32	+.08	+.62**	+.22
5 minimal agreement)	+.04	+.14	+.07	+.32
6 extended agreement)with	-.07	-.30	-.08	-.19
7 minimal disagreement)other	-.26	-.21	+.29	+.19
8 extended disagreement)	-.44	-.37	+.28	-.12
5 + 6	+.01	+.01	+.01	+.17
7 + 8	-.38	-.31	+.36	+.03
6 + 8	-.48	-.56*	+.14	-.23
1 + 3 + 5 + 7	+.06	+.18	-.13	-.01
2 + 4 + 6 + 8	-.14	-.33	+.14	-.34
5 + 6 + 7 + 8	-.46	-.38	+.43	+.25
B performed				
1 minimal agreement)	+.13	+.41	-.15	-.32
2 extended agreement)with	+.23	+.61**	+.60**	+.50
3 minimal disagreement)self	-.30	-.38	+.04	+.44
4 extended disagreement)	-.29	-.18	+.45	+.16
5 minimal agreement)	+.32	-.05	-.33	+.06
6 extended agreement)with	+.01	-.06	-.56*	+.17
7 minimal disagreement)other	-.14	-.20	-.05	-.44
8 extended disagreement)	-.20	-.08	+.14	-.13
5 + 6	+.28	-.08	-.53	+.13
7 + 8	-.21	-.17	+.06	-.28
6 + 8	-.14	-.10	-.23	-.01
1 + 3 + 5 + 7	+.18	-.02	-.53*	-.24
2 + 4 + 6 + 8	-.04	+.23	+.46	+.48
5 + 6 + 7 + 8	+.13	-.30	-.55*	-.19

all correlations are one-tailed product moment.
* $p < 0.05$
** $p < 0.025$

TABLE 3 Correlations between speech act frequencies in intrapersonal conflict and children's change scores over two posttests.

Category		Initial Sociomoral Level			
		Preconventional		Intermediate	
		P - IP	P - DP	P - IP	P - DP
1 minimal agreement	)with	-.25	+.06	-.04	-.58*
2 extended agreement	)conflic-	+.45	+.60*	+.61*	+.33
3 minimal disagreement	)ting	-.06	-.43	-.28	-.08
4 extended disagreement	)position	-.13	-.21	-.40	-.13
1 + 3		-.20	-.24	-.30	-.28
2 + 4		+.20	+.24	+.30	+.28
1 + 2		+.20	+.57*	+.58*	+.18
3 + 4		-.20	-.57*	-.58*	-.18

* $p < 0.05$